

## REMARKS

Applicants appreciate the detailed examination of the present application and the extensive interview conducted with the Examiner on 6 July 2006. During that interview, applicants' representative and the Examiner discussed in detail the applied prior art and applicant's belief that the rejection concerning claims 1-8 was improper. The following is a brief summary of the respective positions taken by the Examiner and the applicants.

### **Claims 1-8:**

Applicants again appreciate the detailed examination of the present application and the extensive interview conducted with the Examiner on 6 July 2006. During that interview, applicants' representative and the Examiner discussed in detail Japan patent number JP02001203099A (referred to herein as JP2001203099 or "the '009 publication") and US patent number US6189481 (referred to herein as "the '481 patent"). The following arguments in support of patentability with respect to claims 1-8 were advanced by applicants during the interview and form applicants' account thereof. In addition, the following arguments support applicants' reasons for withdrawal of the referenced office action and allowance of this application.

The present invention in one respect is characterized in that the nature of plasma generated within a reaction chamber can be affected by operation of at least one variable aperture hole formed in a waveguide that is operatively coupled to the exterior of the chamber, with a dielectric member sealing the chamber but permitting ingress of microwave radiation from the waveguide. In this manner, the flux density of the emitted energy can be modified by operation of the at least one variable aperture hole in the waveguide, thereby affecting the plasma distribution.

The Examiner has rejected claims 1-8 as being obvious (lacking an inventive step) over the '099 publication in view of the '481 patent. The '099 publication is relied upon to establish the basic plasma processing apparatus, but without the variable aperture holes for modulating the emitted microwave radiation, which is a characteristic

of the claimed invention. The '481 patent is relied upon to establish this missing element or feature, namely the variable aperture hole for microwave emission. In Fig. 3A of this secondary reference, shutters 62 are shown and described as operatively occluding radiation ports 32, thereby achieving the stated purpose.

A fundamental difference between the applicants' invention and that disclosed in the '481 patent is that shutters 62 are disposed in chamber 14, where this is NOT the case in the instant application. Claim 1 clearly states that the waveguide is exterior of the chamber. This is true with respect to waveguide 11 of the '099 publication, but this is not true with respect to waveguide 24 of the '481 patent, which is used to supply this critical element. Thus, it appears that the Examiner is only using the '481 patent to establish that aperture occluding shutters are known to vary the amount of radiation emitted there through, and that a skilled practitioner would take this technology and apply it to the apparatus disclosed in the '099 publication and arrive at the claimed invention. For the following reasons, however, applicants submit that this is not true.

Applicants submit that the Examiner has engaged in impermissible hindsight to arrive at his rejection. Claim 1, as presently constituted, requires that the hole area adjusting means be located "in at least one of the plurality of holes" that are defined by the exteriorly mounted waveguide. The '481 patent teaches locating such hole area adjusting means (shutters 62) inside the reaction chamber where radiation ports 32 reside. If a skilled practitioner were to combine the teachings of the '481 patent with the apparatus of the '099 publication, without benefiting from the knowledge of the instant application, applicants submit such hole area adjusting means would be located inside chamber 30 of the apparatus disclosed in the '099 publication. After careful review, applicants submit that the '481 patent only discloses, and makes no suggestion to the contrary, locating shutters 62 within chamber 14. As such, the combination advanced by the Examiner does not lead to all of the requirements of claim 1, unless the teachings of the instant application are used to modify the location of the shutter equivalents. Since this approach cannot be relied upon to reject the claims regarding

this combination, applicants submit that the rejection is improper and must therefore be withdrawn.

In conclusion with respect to claims 1-8, applicants submit that the Examiner has failed to provide the necessary evidence of motivation to combine the references in the manner proscribed by the claims. The Examiner has attempted to establish a basic reason to include the variable aperture feature of the '481 patent with the basic apparatus of the '099 publication, but has failed, to explain how the features of the two references would be combined to arrive at the invention as set forth in claim 1. Because claims 2-8 depend upon claim 1 and are not otherwise rejected, applicants request that the Examiner withdraw his rejection of these claims for the reasons advanced, and indicate them as allowable.

**Claims 9-13:**

The Examiner has also rejected claims 9-13 on other grounds. None of these claims require (a) variable aperture hole(s). Consequently, applicants' arguments above are not applicable, nor was the rejection of these claims discussed during the referenced interview with the Examiner. Moreover, applicants agreed with the Examiner that these claims would benefit from independent prosecution, and the cancellation of these claims would likely advance the present application. Thus, applicants have cancelled claims 9-13 without prejudice to file the same in a continuing-type application prior to the issuance of the present application.

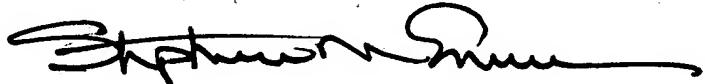
**Conclusion:**

In view of the above, applicants submit that claims 1-8 as previously amended and entered patentably define over the prior art of record. Moreover, there being no other basis advanced for rejecting or objecting to the claims, applicants submit that claims 1-8 are allowable. In view of applicants cancellation of the remaining claims in the application, namely claims 9-13, applicant further submits that the application is now in condition for allowance.

The present response is being submitted within the first month extension period, and a Petition for Extension of Time (1 month) and payment thereof is being made concurrently with this response. Should any additional fees be necessary in order to consider this response timely and proper, the Examiner is authorized to charge Deposit Account No. 07-1897 accordingly. Finally, if any matters remain unresolved after consideration of this response, the Examiner is strongly encouraged to contact the undersigned as soon as possible.

Respectfully submitted this 18<sup>th</sup> day of August 2006.

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